

## **STRAY MAGNETIC FIELDS – THREAT OF ACCIDENTAL MAGNETIC MEDIA ERASURE**

### **THREATS FROM MAGNETS**

**Warning:** A permanent magnet can cause instantaneous erasure of data from magnetic media! Use proper care – keep magnets away from magnetic media (magnetic disks and tapes)!

Even a small magnet placed against the shell of a disk or tape may cause immediate erasure of some of the data. However, a few inches of space between the magnet and the media, protects media from even the strongest magnets. Maintaining a *distance of 3+ inches* from any potential magnetic field source is a certain and easily applied method of protecting magnetic media from any threat of erasure.

### **THREATS FROM ELECTRICAL POWER**

Magnetic fields surround AC powered equipment, heavy power wires and power transformers. However, these fields are not capable of erasing magnetic media when a small distance exists between the source of the magnetic field and the magnetic media.

The magnetic field that surrounds power wires can be intense at the surface of the wire; but at the point where contact can be made (outside of insulation, shielding, conduit, casings, etc.), the field should not be capable of erasing magnetic media. **Caution:** If a power line is laid directly against the shell of a disk or tape and then short-circuited, the short-circuit field intensity could be strong enough to erase data from portions of the media closest to the field.

Electrical equipment, motors and transformers are normally shielded sufficiently that a threat of erasure outside of the casing is slight. **Precaution:** Maintain a prudent 3+ inch distance between magnetic media and any potential magnetic field source and the chance for erasure is eliminated.

### **THREATS FROM X-RAY INSPECTION – NO PRECAUTIONS NEEDED**

It is theoretically impossible for X-rays to erase magnetic media because X-rays are non-magnetic! It is safe to permit X-ray examination of all magnetic media (recorded and unrecorded).

Furthermore, the National Bureau of Standards (NBS) conducted experiments to test this theory. Various recorded media were tested in the NBS Radiation Physics Laboratory. Magnetic media were subjected to extremely high (lethal) X-ray doses without any loss of data. Recorded media were also subjected to normal airport X-ray inspections – without any loss of data. The National Bureau of Standards is now the National Institute of Standards and Technology (NIST).